July 3, 1952

Dr. Werner Braun
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Dear Werner:

Your account of E. coli recombination reads very well, and there is nothing in it that needs correction. The 1951 CSH symposium is now out, and you may find our paper in it a useful recpitakation, in considerable detail, of the work to that time.

Re linear linkage, Rothfels' paper in the current Genetics provides an excellent account. The sequence V_6-Lac_1-P-V_1-L-T appears to be very certainly linear, pooling all the data. I am rather doubtful that the association of M-Lac is actually a linkage, and the left end, Mal-S-Xyl-Mtl-M-B_1 is still rather messy, probably another chromosome. The elimination of the Mal-region messes everything up there.

I would prefer that you not explicitly mention unpublished work on the compatibility factors, although it wouldm of course, be quite fair to keep it in mind in orienting the discussion. The whole thing should come to a head in the next year or so, but there is no way of telling just how it will come out. It looks as if the polarity of the compatibility factors (F+:F-) determines which chromosome will be diminished forvMal.

I've been in close correspondence with Hayes about the possibility of phage in E. coli recombination: he seems to be ready to retract the idea althgether. I think you may perhaps have overemphasized it. The question of the relationship of transformations or transduction to sexuality is also brewing. My own feeling is that they are not so far apart: that transducing factors are chromosome fragments of lesser or greater size that get into donee cell, and are incorporated into its chromosomes. My views are summarized in the enclosed few pages (from a draft of a review: Cell genetics and hereditary symbiosis, going to Physiol. Rev.— may I have them back when you're through). Would you care to have me look brifely at your chapter X?

Concerning prevalence of fertile strains, we have 50 now, from about 2000 tests. There are probably more that were undetected because the tester, W-1177 is F-, but not, say, more than twice as many.

C.H. Browning probably deserves credit for first conceiving a selective test of recombination: J. Path. Bact. 12:166,1908.

Sincerely,

Joshua Lederberg